Michigan Department of Community Health

March 3., 2005

Summary: The Michigan Department of Community Health (MDCH) has confirmed its second case of vancomycin-resistant *Staphylococcus aureus* (VRSA). This represents the fourth US case of VRSA confirmed by the Centers for Disease Control and Prevention (CDC).

Description: The VRSA case-patient is a 78 year old male with a history of coronary artery disease, non-insulin-dependent diabetes mellitus, peripheral vascular disease, neuropathy, chronic renal insufficiency and obstructive uropathy. From October through December 2004, the patient spent four weeks in a hospital and five weeks in a nursing home following surgery for an aortic valve replacement. The patient received vancomycin for most of the nine weeks spent in recovery and rehabilitation. He was discharged home in early December 2004. Following discharge, a small toe wound developed on the patient's foot, progressed, and became infected. The patient was sent to a hospital emergency room in early February 2005 for wound evaluation. The toe was found to be gangrenous at this time and arrangements were made for toe amputation. Cultures taken prior to surgery grew *Morganella morganii, Enterococcus faecalis,* and VRSA (MIC=256 μg/mL). Post-operative wound cultures continue to grow out VRSA. The patient is currently on linezolid, to which this organism is susceptible.

In the laboratory, the VRSA isolate grew on vancomycin screening agar and was reported as vancomycin resistant (MIC >32 μg/mL) using MicroScan panels. Additional testing showed MICs of >256 μg/mL using E-test and 256 μg/mL by broth microdilution. Vitek2 failed to detect resistance with a reported MIC of $\leq$ 1 μg/mL.

The Antimicrobial Resistance Epidemiologist at MDCH worked closely with the hospital, under consultation with epidemiologists from the CDC, to conduct the contact investigation for this VRSA case. Cultures were taken from the anterior nares and any sores or wounds from family members, physicians, nurses, patients, and lab technicians who had the most extensive interaction with the patient and organism since the beginning of February. The MDCH Laboratory processed all cultures and found no VRSA in addition to the toe wound of the case- patient. While the initial cultures of the toe wound grew *E. faecalis*, that isolate was vancomycin-susceptible. However, a surveillance rectal culture collected from the patient grew a vancomycin-resistant *E. faecalis* (VRE). These isolates were forwarded to the CDC for further analysis.

The patient and his dedicated health care providers will be followed throughout treatment until the wound cultures no longer show growth of VRSA, to ensure no colonization or transmission of this VRSA organism.

Report Category: Infectious Disease

Type of Case: Human

Cause/Agent: Vancomycin-Resistant *Staphylococcus aureus*

Setting: Hospital

Location: Michigan

Public Health Actions: Contact investigation in progress; Patient in private room under contact precautions since VRSA identified; Patient treatment and follow-up in progress; Health care provider education completed.

R**equested Action:** **MDCH requests your continued support for immediate notification of any suspect cases of vancomycin-intermediate or -resistant *Staphylococcus aureus* (VISA/VRSA).**

View previous communications at http://www.michigan.gov/mdchlab

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Laboratory Action: **Please continue to screen for vancomycin intermediate or resistant *Staph aureus* using a non-automated method, and forward any suspicious isolates to the MDCH laboratory in Lansing for further testing.**

The vancomycin agar screening procedure is available on our web site at: www.michigan.gov/mdchlab. (Click on Communications. Click on Bureau of Laboratory Broadcast Faxes. Scroll down to May 4, 2004 fax on VRSA.)

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